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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,786	03/22/2000	Nobuhiko Hayashi	000351	8588

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EXAMINER

NGUYEN, TUAN M

ART UNIT PAPER NUMBER

2828

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/532,786

Applicant(s)

HAYASHI ET AL.

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata et al ('357) in view of Hatakoshi et al ('858).

With respect to claims 1 and 11, Hirata et al discloses semiconductor laser including a current blocking layer (8), a ridge stripe portion (7) which is made of an upper layer portion of cladding layer (4) and having an opening width is smaller than the width of the ridge stripe portion, an active layer (3), and method of fabricating a semiconductor laser device containing at least one of indium, gallium, aluminum, boron and thallium on the ridge portion inside the opening, note col. 1 line 10 to col. 8 line 54, see figs 1-10. However Hirata et al did not

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discloses the semiconductor is forming on the nitride based. Whereas Hatakoshi et al discloses a semiconductor laser and method of fabricating the same comprising a nitride based semiconductor layers including cladding layer (13), an active layer (16) a second cladding (19), a light confining layer (20), see figure 1, note cols. 11-12. For the advantageous of semiconductor laser device and method of fabricating the same, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hirata et al with the nitride based semiconductor layers as taught or suggested by Hatakoshi et al.

With respect to claim 2, Hatakoshi et al show in figure 1 a current blocking layer (20) is composed of a nitride based semiconductor containing at least one of indium, gallium, boron and thallium.

With respect to claim 3, Hatakoshi et al show in figure 1 first nitride based semiconductor layer comprises an n-type cladding layer (13), said light emitting layer (16) and a first p-type cladding layer (19) and said ridge portion comprises a second p-type cladding layer.

With respect to claim 4, Hatakoshi et al show in figure 33A a current blocking layer contains aluminum and gallium, note col. 29.

With respect to claims 5-7, Hatakoshi et al show in figure 1 a current blocking layer contains indium and gallium and the ratio of the first width of the upper surface of ridge portion to the width of the opening of current blocking layer is not less than 0.1 nor more than 0.95.

With respect to claims 8-9, Hatakoshi et al show in figure 1 an electrode (22), a current blocking (20).

With respect to claim 10, Hatakoshi et al show in figure 30 the current blocking layers (240, 241) has a multi layer structure.

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With respect to claims 12-18, Hatakoshi et al discloses the method of forming first nitride based semiconductor layer comprising the step of forming an n-type cladding layer, a ridge stripe portion, an type of electrode on the second nitride based and the step of stacking a plurality of nitride based semiconductor layers containing at least one of indium, gallium, aluminum, born and thallium, note col. 11 line 15 to col. 38 line 64.

Citation Of The Pertinent References

3. The prior art made of record and not relied upon us considered pertinent to applicant's disclose.

The patent to Yoshie et al (US patent 6,580,736) discloses semiconductor light emitting device.

The patent to Ohbo et al (US patent 6,534,800) discloses semiconductor device and method of fabricating the same.

The patent to Okumura (US patent 6,456,640) discloses gallium nitride type semiconductor laser device.

The patent to Kitoh et al (US patent 6,256,331) discloses semiconductor laser device, optical communication system using the same, and method for producing compound semiconductor.

The patent to Yamamoto et al (US patent 6,064,079) discloses gallium nitride based compound semiconductor device.

The patent to Hiroyama et al (US patent 5,963,572) discloses semiconductor laser device and manufacturing method thereof.

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Communication Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip
SPE
Art unit 2828

TMN
June 26, 2003